



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,794	09/30/2003	Hua-Jun Zeng	MCS-042-03	8378
27662	7590	06/01/2007	EXAMINER	
MICROSOFT CORPORATION			FLEURANTIN, JEAN B	
C/O LYON & HARR, LLP				
300 ESPLANADE DRIVE			ART UNIT	
SUITE 800			PAPER NUMBER	
OXNARD, CA 93036			2162	
			MAIL DATE	
			DELIVERY MODE	
			06/01/2007	
			PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/676,794	Applicant(s) ZENG ET AL.	
	Examiner JEAN B. FLEURANTIN	Art Unit 2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/30/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is in response to the amendment filed on 09/30/2003.

Claims 1-63 are presented for examination.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 09/30/2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

The Drawings submitted 09/30/2003 on are acknowledged.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-63 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As set forth in MPEP 2106:

As per independent claim 1

The independent claim 1 is directed to a computer-implemented method, in which generating page rankings. Therefore, the mechanism for re-ranking, a linear combination of a position of a page in two lists, sorted by similarity as the purpose of the invention. The claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful and tangible result.

As per claim 13

Claim 13 is directed to a computer-readable medium, in which generating page rankings. Therefore, the mechanism for re-ranking, a linear combination of a position of a page in two lists, sorted by similarity as the purpose of the invention. The claimed, "medium" fails to fall within one of four statutory categories of invention, process, machine, manufacture and composition, since it fails to produce a useful and tangible result.

Furthermore, the claim lacks the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor a composition of matter. As such, the claim fails to fall within a statutory category. It is, at best, functional descriptive material per se.

As per independent claim 14

The independent claim 14 is directed to a process, in which generating two-item sequential patterns. Therefore, the mechanism for re-ranking, a linear combination of a position of a page in two lists, sorted by similarity as the purpose of the invention. The claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful and tangible result.

As per claim 28

Claim 28 directed to a computer-readable media, in which generating two-item sequential patterns. Therefore, the mechanism for re-ranking, a linear combination of a position of a page in two lists, sorted by similarity as the purpose of the invention. The claimed, "media" fails to fall with one of four statutory categories of invention, process, machine, manufacture and composition, since it fails to produce a useful and tangible result.

Furthermore, the claim lacks the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor a composition of matter. As such, the claim fails to fall within a statutory category. It is, at best, functional descriptive material per se.

As per independent claim 29

The independent claim 29 is directed to a computer-implemented method, in which generating ordered pairs of pages. Therefore, the mechanism for re-ranking, a linear combination of a position of a page in two lists, sorted by similarity as the purpose of the invention. The claimed, "medium" fails to fall with one of four statutory categories of invention, process, machine, manufacture and composition, since it fails to produce a useful and tangible result.

As per independent claim 40

The independent claim 40 is directed to a computer-readable medium, in which filtering the ordered pairs. Therefore, the mechanism for re-ranking, a linear combination of a position of a page in two lists, sorted by similarity as the purpose of the invention. The claimed, "medium" fails to fall with one of four statutory categories of invention, process, machine, manufacture and composition, since it fails to produce a useful and tangible result.

Furthermore, the claim lacks the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor a composition of matter. As such, the claim fails to fall within a statutory category. It is, at best, functional descriptive material per se.

As per independent claim 55

The independent claim 55 is an implicit links search enhancement system, in which generating ordered pairs. The claimed steps are not being performed by any form computer hardware component. Therefore, the mechanism for re-ranking, a linear combination of a position of a page in two lists, sorted by similarity as the purpose of the invention. The claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful and tangible result.

Furthermore, the claim lacks the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor a composition of matter. As such, the claim fails to fall within a statutory category. It is, at best, functional descriptive material per se.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the

medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)

Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.").

Therefore, the dependent claims are rejected under the same rational.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over "The Page Rank Citation Ranking: Bringing Order to the Web - 1998" Issued to Page et al., ("Page") in view of "Mining Access Patterns Efficient from Web Logs - 2000" issued to Pei et al., ("Pei"), both submitted by the Applicant.

As per claim 1, Page discloses "a computer-implemented method for generating page rankings using a user access log" (i.e., built a web search engine, page rank; see page 2, pp 1.2 & page 14, pp 7.3 & Fig. 7), comprising "generating an implicit links graph from the extracted implicit links" (i.e., page rank; see Fig. 7; and "computing page rankings using the implicit links graph" (i.e., calculating (computing) page rank; see page 10, table 1).

Page fails to explicitly disclose extracting implicit links from the user access log. However, Pei discloses extracting implicit links from the user access log (see Pei page 396, pp 1 - section introduction & page 397, pp 2 & table 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Page by extracting implicit links from the user access log as disclosed by Pei (see Pei page 400, pp 3). Such a modification would allow the method of Page to provide efficiently mining web access from large set of pieces of web log (see Pei page 397, last pp), therefore, improving the accuracy of the implicit links search enhancement system and method for search engines using implicit links generated by mining user access patterns.

As per claims 2 and 4, Page substantially discloses the claimed limitations except segmenting the user access log into a plurality of different browsing sessions. However, Pei discloses segmenting the user access log into a plurality of different browsing sessions (see Pei page 396, pp 1 - section introduction & page 397, pp 2 & table 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Page by user access log as disclosed by Pei (see Pei page 400, pp 3). Such a modification would allow the method of Page to provide efficiently mining web access from large set of pieces of web log (see Pei page 397, last pp), therefore, improving the accuracy of the implicit links search enhancement system and method for search engines using implicit links generated by mining user access patterns.

As per claim 3, Page discloses "extracting implicit links further comprising using a two-item sequential pattern mining technique to extract the implicit links from the plurality of different browsing session" (see page 11, pp 6 & table).

As per claim 5, Page further discloses "the implicit links graph is a weighted direct graph" (page 4, pp 1)

As per claim 6, Page further discloses "the implicit links graph is described by the equation $G'=(V,E')$, where V is a set of vertices representing all pages in a search space and E' encompasses a set of implicit links between the pages" (see page 3, pp 2.4 & page 11, pp 6).

As per claim 7, Page discloses "each of the implicit links further includes a conditional probability parameter of a page to be visited given a current page" (i.e., ranking, probability; see page 8, pp 2, lines 7-13).

As per claim 8, in addition to claim 1, Page substantially discloses the claimed limitations except user access log. However, Pei discloses user access log (see Pei page 396, pp 1 - section introduction & page 397, pp 2 & table 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Page by user access log as disclosed by Pei (see Pei page 400, pp 3). Such a modification would allow the method of Page to provide efficiently mining web access from large set of pieces of web log (see Pei page 397, last pp), therefore, improving the accuracy of the implicit links search enhancement system and method for search engines using implicit links generated by mining user access patterns.

As per claim 9, in addition to claim 1, Page further discloses "the two-item sequential pattern mining technique" (see page 5, pp 2.5).

As per claim 10, Page further discloses "generating order pairs of pages using the gliding window" (see page 13, pp 7.1).

As per claim 11, Page further discloses "updating the implicit links graph by setting all weights in two-item sequential patterns to zero" (see page 7, pp 3.1).

As per claim 12, Page further discloses "adding a support to each of the weights" (i.e., adding links and computing weight; see page 7, pp 3.1).

As per claim 13, the limitations of claim 13 are similar to claim 1, therefore, the limitations of claim 13 are rejected in the analysis of claim 1, and this claim is rejected on that basis.

As per claims 14-16, the limitations of claims 14-16 are similar to claims 1-4, therefore, the limitations of claims 14-16 are rejected in the analysis of claims 1-4, and these claims are rejected on that basis.

As per claim 17, in addition to claim 14, Page substantially discloses the claimed limitations except user access log. However, Pei discloses user access log (see Pei page 396, pp 1 - section introduction & page 397, pp 2 & table 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Page by user access log as disclosed by Pei (see Pei page 400, pp 3). Such a modification would allow the method of Page to provide efficiently mining web access from large set of pieces of web log (see Pei page 397, last pp), therefore, improving the accuracy of the implicit links search enhancement system and method for search engines using implicit links generated by mining user access patterns.

As per claim 18, in addition to claim 14, Page substantially discloses the claimed limitations except user access log. However, Pei discloses user access log (see Pei page 396, pp 1 - section introduction & page 397, pp 2 & table 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Page by user access log as disclosed by Pei (see Pei page 400, pp 3). Such a modification would allow the method of Page to provide efficiently mining web access from large set of pieces of web log (see Pei page 397, last pp), therefore, improving the accuracy of the implicit links search enhancement system and method for search engines using implicit links generated by mining user access patterns.

As per claim 19, Page discloses "pre-processing further comprises performing consecutive repetition elimination to handle a situation where multiple users have the same IP address" (see page 11, pp 5.5).

As per claim 20, Page discloses "removing IP addresses whose page hits count exceeds a threshold" (see page 8, pp 2).

As per claims 21-24, the limitations of claims 21-24 are similar to claims 2, 4, 8 and 17-18, therefore, the limitations of claims 21-24 are rejected in the analysis of claims 2, 4, 8 and 17-18, and these claims are rejected on that basis.

As per claims 25-39, the limitations of claims 25-39 are similar to claims 1, 3, 5-7, 10-13, therefore, the limitations of claims 25-39 are rejected in the analysis of claims 1, 3, 5-7, 10-13, and these claims are rejected on that basis.

As per claim 40, in addition to claim 1, Page further discloses "filtering the ordered pairs using a minimum support threshold to remove any infrequently occurring ordered pairs to generate two-item sequential patterns" (see page 9, pp 5.1).

As per claims 41-54, the limitations of claims 41-54 are similar to claims 1-13, therefore, the limitations of claims 41-54 are rejected in the analysis of claims 1-13, and these claims are rejected on that basis.

As per claims 55-63, the limitations of claims 55-63 are similar to claims 1-13, therefore, the limitations of claims 55-63 are rejected in the analysis of claims 1-13, and these claims are rejected on that basis.

CONTACT INFORMATION

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEAN B. FLEURANTIN whose telephone number is 571 – 272-4035. The examiner can normally be reached on 7:05 to 4:35.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BREENE can be reached on 571 – 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jean Bolte Fleurantin

Patent Examiner

Technology Center 2100

May 25, 2007